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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/786,003	02/26/2004	Ahmed E. Hassan	42783-0038	3544

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EXAMINER	
ZHOU, YONG	
ART UNIT	**PAPER NUMBER**
2609	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/786,003	HASSAN ET AL.	
	Examiner	Art Unit	
	Yong Zhou	2609	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11/22/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tourunen et al. (US Patent Application No. 2001/0043579) in view of 3GPP Technical Specification 04-65 v8.2.0 (referred to as "3GPP 04-65-820" hereinafter).

Regarding claim 1, Tourunen et al. teach in a communications system having a group of interface devices for assembling messages transmitted as sequences of data packets from within a coverage area of a wireless communications network ([0019], lines 4-7, wherein SGSNs and GGSNs contained in the GPRS/UMTS network are equivalent to the claimed group of interface devices), a method for assembling a message from a sequence of data packets, including:

receiving at one interface device of the group of interface devices from the wireless communications network at least one data packet of a sequence of data packets ([0019], lines 16-19) that collectively form a message; and

determining if the at least one data packet meets a predetermined criteria and if so sending out a request to the other interface devices of the group for any data packets of the sequence received by the other interface devices and receiving at the one

interface device any data packets sent by the other interface devices in response to the request ([0027], lines 3-11, and Fig. 4, #414, #418).

Although only the example of forwarding the untransmitted downlink data packets to the new SGSN is described in the Tourunen et al. invention, it should be noted that the same mechanism also applies to forwarding of the uplink data packets received at the old SGSN to the new SGSN.

Tourunen et al. also teach that user data transmitted in the SNDCP layer are segmented to one or more SNDC data units ([0024], lines 4-6). But Tourunen et al. do not specifically teach assembling the data packets of the sequence into the message at the one interface device, although it is inherent that data segmented at the SNDCP on the transmitting side would need to be assembled at the SNDCP on the receiving side. In fact, segmentation and reassembly are essential part of the SNDCP protocol.

3GPP 04-65-820 teaches that receiving SNDCP entity shall reassemble the segments back to the original N-PDU (p32, Sec 6.7 (Segmentation and Reassembly), lines 2-3).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Tourunen et al. invention to include the reassembly as taught by 3GPP 04-65-820 to achieve predictable results of reliable data transmission between transmitting and receiving entities.

Regarding claim 2, Tourunen et al. further teach prior to sending out the request, determining if the one interface device has received all the data packets of the sequence, wherein the request to the other interface devices is sent out only if a

determination is made that the one interface device has not received all the data packets of the sequence ([0027], lines 3-11, and Fig. 4, #414; it is inherent that the new SGSN would not have received all the packets at the beginning of the handover).

Regarding claim 3, 3GPP 04-65-820 further teaches that the predetermined criteria is that the at least one data packet is the final data packet in the sequence (p42, Fig. 19, M bit: 0 for last segment of N-PDU, wherein the final data packet (segment) in the sequence (N-PDU) must be received before the assembly).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the procedure of Tourunen et al. and 3GPP 04-65-820 to include the final data packet determination as taught by 3GPP 04-65-820 to achieve predictable results of reliable data transmission.

Regarding claim 4, Tourunen et al. further teach that the group of interface devices are distributed computers connected by a wired network across which the request is sent ([0019], lines 4-7, wherein the SGSNs and GGSNs, as part of the core packet network, are inrterconnected via an IP backbone network, see [0024], lines 17-20).

Regarding claim 5, Tourunen et al. further teach that the request includes an interface device identifier (SGSN address, [0020], line 5) identifying the one interface device and a sequence identifier identifying the sequence (PDU number, [0008], lines 4-6).

Regarding claim 6, 3GPP 04-65-820 further teach that each data packet of the sequence includes information associating the data packet with the message and

information indicating a location of the data packet within the sequence, wherein the criteria is based on a location of the at least one data packet within the sequence (Sequence number, p42, Fig. 19).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the procedure of Tourunen et al. and 3GPP 04-65-820 to include the data packet-sequence association and packet location indication as taught by 3GPP 04-65-820 to achieve predictable results of reliable data transmission.

Regarding claim 7, Tourunen et al. further teach monitoring at the other interface devices of the group for the request and in reply thereto sending to the one interface device any data packets for the sequence received at the other interface devices ([0027], lines 3-4; it is inherent that the SGSNs are initialized to communicate with each other via the IP backbone, see [0024], lines 17-20).

Regarding claim 8, Tourunen et al. further teach monitoring at the one interface device for a request from any of the other interface devices of the group for data packets of a requested sequence, and sending any data packets of the requested sequence received by the one interface device to a requesting one of the other interface devices of the group ([0027], lines 3-4).

Regarding claim 9, Tourunen et al. further teach that the coverage area is a substantially continuous geographic area (BTS, Fig. 1).

Regarding claim 10, Tourunen et al. further teach that the coverage area includes a plurality of geographically dispersed areas (BTSs, Fig. 1).

Regarding claim 11, Tourunen et al. teach a gateway for exchanging messages between a packet-based wireless communication network and a second communication network, including:

a gateway network (GPRS/UMTS network containing SGSNs and GGSNs, [0019], lines 4-7);

a group of interface devices for receiving messages transmitted as sequences of data packets from within a coverage area of the wireless communications network ([0019], lines 16-19), the group of interface devices being coupled to the gateway network for communicating there between, each of the interface devices including a message assembler for determining if the interface device should assemble a message for a sequence of data packets of which the interface device has received at least one data packet and if so sending out a request for any missing data packets to the other interface devices in the group over the gateway network ([0027], lines 3-11, and Fig. 4, #414, #418).

Tourunen et al. also teach that user data transmitted in the SNDCP layer are segmented to one or more SNDC data units ([0024], lines 4-6). But Tourunen et al. do not specifically teach assembling the message upon receiving the missing data packets, although it is inherent that data segmented at the SNDCP on the transmitting side would need to be assembled at the SNDCP on the receiving side.

3GPP 04-65-820 teaches that receiving SNDCP entity shall reassemble the segments back to the original N-PDU (p32, Sec 6.7 (Segmentation and Reassembly), lines 2-3).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Tourunen et al. invention to include the reassembly as taught by 3GPP 04-65-820 to achieve predictable results of reliable data transmission between transmitting and receiving entities.

Regarding claim 12, Tourunen et al. further teach that each data packet sent over the wireless network is directed to a single interface device (MS and BTS, Fig. 1).

Regarding claim 13, 3GPP 04-65-820 further teaches that the message assembler of each interface device determines if the interface device should assemble the message based on whether the interface device has received a data packet having a predetermined location in the sequence of data packets (p42, Fig. 19, M bit: 0 for last segment of N-PDU, wherein the final data packet (segment) in the sequence (N-PDU) must be received before the assembly).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the procedure of Tourunen et al. and 3GPP 04-65-820 to include the data packet location indication as taught by 3GPP 04-65-820 to achieve predictable results of reliable data transmission.

Regarding claim 14, 3GPP 04-65-820 further teaches that the predetermined location is a last location in the sequence of data packets (p42, Fig. 19, M bit: 0 for last segment of N-PDU).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the procedure of Tourunen et al. and

3GPP 04-65-820 to include the last location indication as taught by 3GPP 04-65-820 to achieve predictable results of reliable data transmission.

Regarding claim 15, Tourunen et al. further teach that the message assembler of each interface device monitors for a request for missing data packets of a sequence from other interface devices in the group and upon receipt thereof sends over the gateway network to the requesting interface device any missing data packets of the sequence that have been received thereby ([0027], lines 3-4).

Regarding claim 16, it includes the same limitations as claim 11 except for at least a further group of further interface devices for carrying out the same steps listed in claim 11. Tourunen et al. further teach at least a further group of further interface devices (SGSNs and GGSNs, [0019], lines 4-7).

Regarding claim 17, Tourunen et al. further teach that each of the group and further group are assigned a respective dedicated communications channel on the gateway network (tunnel, [0024], lines 17-20) for communicating requests for missing packets.

Regarding claim 18, Tourunen et al. further teach a plurality of wireless network adaptors associated with each interface device for converting data packets received from the coverage area from a first protocol to a second protocol suitable for the interface devices (BTSs, Fig. 1).

Regarding claim 19, Tourunen et al. further teach that the coverage area is a substantially continuous geographic area (BTS, Fig. 1).

Regarding claim 20, Tourunen et al. further teach that the coverage area includes a plurality of geographically dispersed areas (BTSs, Fig. 1)

Conclusion

3. Any Response to this Office should be **faxed** to (571) 273-8300 or **mailed to**:

Commissioner for Patents,
P.O. Box 1450
Alexandria, VA 22313-1450

Hand-delivered responses should be brought to
Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yong Zhou whose telephone number is (571) 270-3451. The examiner can normally be reached on Monday - Friday 8:00am - 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Benny Q. Tieu can be reached on (571) 272-7490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

YZ

BENNY Q. TIEU
SPE/TRAINER.